

REMARKS

In the Office Action, claims 1-4 are rejected. With this paper, claim 1 is amended. The support for the amendment can be found in the description of experiment examples from page 13 to page 24 of the originally filed specification. No new matter has been introduced.

Claim Rejections under 35 USC §103

The Office rejected claims 1-4 based on the following grounds:

1. *Claims 1, 3 and 4 are rejected under 35 USC §103(a) as being unpatentable over Japanese document 10-138,405 (JP-405 hereinafter) in view of Takeuchi et al (US Publication 2003/0089808, Takeuchi hereinafter), either alone, or further in view of Japanese document Kokai 62-101,421 (JP-421 hereinafter).*
2. *Claim 2 is rejected under 35 USC §103(a) as being unpatentable over JP-405 in view of Japanese document P3075431 (JP-431 hereinafter), either alone, or further in view of JP-421.*

With this paper, claim 1 is amended: (1) to add a limitation on the film thickness; and (2) to further specify that the hardness measurement is performed on a roll of polyvinyl alcohol film having a total thickness no less than that of a 1,000 m polyvinyl alcohol film wound around the cylindrical core.

JP-405 relates to a process of laminating a cellulose-based film with a polyvinyl alcohol based film through a "laminate roll". In particular, the laminate roll is made with rubber and the surface hardness of the laminate roll is within the range of 70-90 in Shore A hardness (JIS K-6301). The Examiner acknowledged that JP-405 does not teach (1) the roll is made of a metal, and (2) the film roll hardness (i.e. the hardness of a roll of laminated film, which should not be confused with the "laminate roll") is necessarily within the claimed range.

Citing the second reference, Takeuchi, the Examiner states that:

Apparently, a 1000meter long film, when wound, is considered to be a lower limit for length of film, in that lengths shorter than this have low stress due to low weight from the other layer on top of them and do not have flatness deterioration seen in large length wound films (see paragraph 18). It would be reasonable to assume from this disclosure that the instant length would have had a minimal effect on the hardness measured since the thickness of the wound film would be small. Remember, we are talking about micron-sized thickness of the film, so that a wound 1000 meter long film may have very little thickness once wound up. So saying, it is submitted that a 1000 meter long film would on a roll having the instant hardness would be tested to have a hardness that does not appreciably deviate from the hardness of the roll itself. (Office Action, page 2, lines 12-22)

Applicant respectfully disagrees with the Examiner's assessment. In particular, the Applicant is of a different opinion that a 1000 meter of polyvinyl alcohol film of the present invention wound on a core would have a minimal effect on the hardness measured on the film surface.

In Takeuchi, the preferred thickness of the polyester or polyamide resin film is 10 μm or less (paragraph [0014]), whereas in the present application, the preferred thickness of the polyvinyl alcohol film is 30 μm to 90 μm (page 10, line 19 of the instant specification). This means, in preferred embodiments, winding a 1,000 meter length of the polyvinyl alcohol film on a core would have a much higher total thickness than winding a same length of the polyester or polyamide resin film of Takeuchi on a core of the same outer diameter. For example, it is estimated that the total thickness of a 1,000 meter long polyvinyl alcohol film with 30 μm thickness wound around a cylindrical core of 165 mm in outer diameter is at least **50 mm**. This kind of thickness cannot be considered as insufficient in shading the influence of the core hardness on the film roll surface.

Furthermore, in Takeuchi, hardness values measured across the film roll are relative values, nowhere in the reference is an absolute value of the hardness given. Therefore, Takeuchi does not disclose a hardness range as recited in claim 1.

Both Takeuchi and JP-421 teach winding polyester, polyamide, or the like, film on a core. The films in Takeuchi and JP-421 are used as a base film for a magnetic recording medium (paragraph [0014] of Takeuchi and English translation of JP-421). The films of

Takeuchi and JP-421 are materially different from the polyvinyl alcohol film of the present invention, which is used as, for example, a polarizing film for display devices. When Takeuchi states that a film roll having a length of less than 1000 meters generates relatively low interlayer stress due to a reduced number of wound layers and barely undergoes deterioration of flatness (paragraph 18), the subject matter of concern is the polyester or polyamide resin film, not the polyvinyl alcohol film of the present invention. Unfortunately, this teaching of Takeuchi was taken out of context by the Examiner.

In the Office Action, the Examiner further states that:

However, it should be noted that it is **not the film itself** that is being taken from Japanese-421, but rather the **teaching of the winding hardness**. It is recognized that the films are different. However, it has never been shown on record that the material of the film has any appreciable effect on the tested winding hardness, or more importantly, exactly what such effect would be. In truth, it could very well be a minimal effect. It is respectfully submitted that winding a film to the instant winding hardness would have been obvious from Japanese-421, **regardless of the material of the film** (Office Action, page 3, lines 11-18).

Applicant's representative would like to remind the Examiner that a face-to-face interview participated by the Examiner and the undersigned applicant's representative was held on February 12, 2007 at the USPTO. In the interview, samples of the polyvinyl alcohol film of the present invention and the PET film (a kind of polyester film) same as in JP-421 are shown to the Examiner and material property differences in these films were discussed. The samples shown in the interview demonstrated that, the polyester film is a hydrophobic resin film that is not generally affected by moisture. It is relatively easy to wind the polyester film around a core. Polyvinyl alcohol film, on the other hand, is a hydrophilic resin film. It is easily affected by moisture and it absorbs the moisture significantly. It is hard to wind polyvinyl alcohol films wrinkle and defects free. Therefore, at least from the viewpoint of the winding properties, polyvinyl alcohol films and polyester or polyamide films are not equivalent.

It is respectfully submitted that although the teaching of winding hardness is not novel, controlling of the winding hardness in winding polyvinyl alcohol films has never been disclosed previously. The cited references, either alone or in combination, fail to arrive at the instant invention as claimed.

Based on the foregoing, the currently amended claim 1 is patentable. Applicant respectfully requests the rejection of claim 1 be reconsidered and withdrawn.

Claims 2-4 depend from claim 1. Since claim 1 is believed to be patentable, claims 2-4 are also patentable. Applicant respectfully requests the rejections of claims 2-4 be reconsidered and withdrawn.

Conclusion

For all the foregoing reasons, it is believed that all the remaining claims of the instant application are patentable, and their passage to issue is earnestly solicited. Applicant's agent urges the Examiner to call to discuss the present response if anything in the present response is unclear or unpersuasive.

Respectfully submitted,



Date: Oct. 3, 2007

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